

Application No. 10/667,238
Response to Office Action of April 24, 2006

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AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A paper or paperboard comprising a paper web that comprises cellulosic fibers, starch and a boron-containing compound, wherein the amount of boron-containing compound is equal to or less than about 7% by weight of the starch; and
greater than 50% of the starch and boron-containing compound is located at or near the surfaces of the web.
2. (Currently Amended) The paper or paperboard of claim 1, further comprising a sizing, wherein a paper web comprising cellulosic fibers and having a sizing applied to the paper web, the sizing comprising comprises at least a portion of a total amount of the starch solids and at least a portion of a total amount of the a boron-containing compound.
3. (Cancelled)
4. (Cancelled)
5. (Original) The paper or paperboard of claim 1 wherein the amount of starch is equal to or less than about 200 lbs per ton of fiber.
6. (Cancelled)

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7. (Original) The paper or paperboard of claim 1 wherein the boron-containing compound is selected from the group consisting of boric acid and borate metal salts.

8. (Currently Amended) The paper or paperboard of claim 1, 7 wherein the boron-containing compound is selected from the group consisting of boric acid, borax, and zinc borate.

9. (Original) The paper or paperboard of claim 1 wherein the boron-containing compound and the starch form a complex.

10. (Original) The paper or paperboard of claim 1 wherein the starch is an anionic starch.

11. (Original) The paper or paperboard of claim 1 wherein the starch is a cationic starch.

12. (Original) The paper or paperboard of claim 1 wherein the starch is an amphipathic starch.

13. (Original) The paper or paperboard of claim 1 wherein the starch is selected from the group consisting of corn starch, wheat starch, potato starch, rice starch, tapioca starch, and sago starch.

14. (Currently Amended) A method for ~~forming a~~ making the paper or paperboard according to Claim 1, comprising:

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providing a papermaking furnish comprising cellulosic fibers, starch and a boron-containing;
forming a fibrous web from the papermaking furnish; and
drying the web

15. (Original) The method of claim 14 further comprising calendering the web to provide a finished paper or paperboard.

16. (Original) The method of claim 14 which further comprises mixing converted starch and at least a portion of the boron-containing compound to provide a slurry and adding the slurry to a cellulosic fiber furnish to provide the papermaking furnish.

17. (Original) The method of claim 14 which further comprises mixing unconverted starch and at least a portion of the boron-containing compound to provide a slurry, cooking the slurry to convert the starch and adding the cooked slurry to a cellulosic fiber furnish to provide the papermaking furnish.

18. (Original) The method of claim 1 which further comprises adding the boron-containing compound and the converted starch individually to a cellulosic fiber furnish to provide the papermaking furnish.

19. (Currently Amended) A method for ~~forming a~~ making the paper or paperboard according to Claim 1, comprising:

providing a papermaking furnish including cellulosic fibers;

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forming a fibrous web from the papermaking furnish;
drying the web; and
sizing the web by applying slurry to the web, the slurry including starch solids and a ~~boron-containing~~ boron-containing compound.

20. (Original) The method of claim 19 further comprising calendering the sized web to provide a finished paper or paperboard.

21. (New) The paper of paperboard according to Claim 1, wherein the amount of boron-containing compound is from about 0.2% to about 7% by weight of the starch.

22. (New) The paper of paperboard according to Claim 1, wherein the amount of boron-containing compound is less than 5% by weight of the starch.

23. (New) The paper of paperboard according to Claim 1, wherein the amount of boron-containing compound is from about 0.2 to less than 5% by weight of the starch.